DOCUMENT RESUME

ED 043 351 LI 002 142

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TITLE	A Critique on Standards for Evaluating Library Collections; Supplement I to Final Report: A Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extensive or Unique Collections of Research Materials.
INSTITUTION	George Washington Univ., Washington, D.C. Biological Sciences Communication Project.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-8-0310
PUB DATE	Apr 70
CONTRACT	OEC-0-8080310-3742(095)
NOTE	62p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$3.20
DESCRIPTORS	*Evaluation Criteria, *Government Libraries, *Library Collections, *Research Reviews (Publications), *Standards

ABSTRACT

An effort to determine the feasibility of formulating a series of criteria for assessing research collections in Federal libraries is delineated in this report. The direction of the investigation was based on a four-stage approach: (1) review the literature for relevant information; (2) enumerate and describe available guides and criteria, and evaluate their possible usefulness as components of, or contributions to standards for measurement; (3) formulate test standards; and (4) test their application in a selected number of libraries. Part I of the report is devoted to a discussion of the topics mentioned above. Part II is a bibliography including references selected from the hundreds reviewed as being most applicable and pertinent to evaluating library collections. (This report is a supplement to LI 002 141.) (Author)

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or Unique Collections of Research Materials

April 1970

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Biological Sciences Communication Project
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LIBR 142

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Preface.

The Federal Library Committee's Task Force on Acquisition of Library Materials and Correlation of Federal Library Resources has, since May 1965, been interested in possible programs and methods which might provide the basis for recommending a correlated program for the acquisition and retention of research materials adequate for the Government's needs and its national responsibilities. The number of libraries involved, the varied types of materials, and the different methods of organization as well as the different emphasis in their collections complicate attempts to develop methods for analyzing and evaluating these collections. After eliminating a number of approaches the decision was made to request an investigative report based on a method involving a library-by-library study, using a standard classification and subject terminology (the Dewey Decimal Third Summary) and uniform criteria.

Accordingly, with the support of the Task Force and with funds from the Office of Education, a contract was arranged with the Biological Sciences Communication Project of the George Washington University Medical Center to undertake a study which would determine the nature of the various collections in Federal libraries. When it was realized during examination of data furnished by the libraries within the purview of the study that a problem relative to evaluation existed a related study concerned with standards was authorized.

The direction of this related study involves a four-stage approach:

1) review the literature for relevant information on standards for evaluating library collections

2) enumerate and describe available guides and criteria, and evaluate their possible usefulness as components of, or contributions to standards for measurement

3) formulate test standards

4) test their application in a selected number of libraries

The report of findings is considered a supplement to the originally authorized "Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extension or Unique Collections of Research Materials" and is in the nature of a critique. Included are a list of guides useful in evaluating subject collections and a bibliography of references selected for their relationship to standards for library collections.

Hopefully, the findings will be of assistance in interpreting the data from 188 Federal libraries included in the resources study and, in addition, it will be a contribution to library literature, as well.

Abstract

An effort to determine the feasibility of formulating a series of criteria for assessing research collections in Federal libraries is delineated in this report. The direction of the investigation was based on a four-stage approach:

1) review the literature for relevant information

2) enumerate and describe available guides and criteria, and evaluate their possible usefulness as components of, or contributions to standards for measurement

3) formulate test standards

4) test their application in a selected number of libraries

Part I of the report is devoted to a discussion of the topics mentioned above. Part II is a bibliography including references selected from the hundreds reviewed as being most applicable and pertinent to evaluating library collections.

Summary.

During preparation of "A Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extensive or Unique Collections of Research Materials" (OE Bureau of Research Project Contract No. OEC-0-8-080310-3742(095)) there was an increasing realization that any effort directed towards examination of collections, for the purpose of evaluation and comparison, would be fruitless.

Definitions of three types of collections on which the study was based were furnished Federal libraries. These pertained to E (Exhaustive), Rs (Research) and U (Unique). While the evidence of few E collections was anticipated, the reporting of a large number of Rs collections was surprising, and, in some instances, incurs the question of validity. This situation has resulted, apparently, from the variation in the manner of interpretation of the intent of the definitions and the manner in which they were applied or used. The definition of a research collection seems to have been altered, probably unintentionally by those who responded to a questionnaire, to imply the service status of an individual library rather than to imply the literature status, namely the degree of completeness of a library in subject content.

Thus, a reviewer, or evaluator of data submitted in response to questionnaires is faced with a dilemma, and a number of questions arise such as:

1) can a satisfactory formula be devised for evaluating Federal libraries

2) can a library reporting a small number of volumes in a certain subject area be termed a research library when compared with another library reporting a much larger collection

3) what has been the experience of others in attempting to evaluate subject collections

4) what should be the approach in evaluating and what factors should be considered

5) what standards are applicable

6) is there an existing bibliography on standards for evaluating collections

In consequence, an investigation was undertaken to consider possible answers to these questions and to determine the feasibility of formulating a series of criteria for assessing research collections in the Federal libraries.

This resulting report is considered a Supplement to the original "Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extensive or Unique Collections of Research Materials". It is in two parts. Part I is devoted to a discussion of the questions outlined above. Part II is a bibliography of references pertinent to the discussion.

INTRODUCTION

A CRITIQUE ON STANDARDS FOR EVALUATING LIBRARY COLLECTIONS

Section E, Phase I of the contract for the Study of Resources and Major Subject Holdings Available in U.S. Federal Libraries Maintaining Extensive or Unique Collections of Research Materials specifies "formulation of an interview schedule to be used for examination of the collections of selected Federal libraries. This step includes: developing time schedules and plans of work; selecting library experts and subject literature specialists for conducting interviews and evaluating information; and setting up specific details of techniques and procedures."

An attempt to carry out the intent of this portion of the contract, namely validation and evaluation, proved frustrating. There was an increasing realization, as review of the questionnaires progressed that the data obtained could serve only as a guide to the subject holdings of U.S. Federal libraries. Any effort directed towards examination for the purpose of evaluation and comparison, would be fruitless in many instances. This situation results from the variation in the manner of interpretation of the intent of the definitions of comprehensive, research and unique collections and the manner in which they were applied or used. A contributing factor to the variation was the use of the Dewey Decimal classification as a standard for subject terminology and class numbers.

The definitions, when selected for inclusion in the instructions

sent to Federal libraries, were considered realistic and satisfactorily descriptive of the three types of collections on which the study was to be based. They were also thought to be useful both as guides for reporting by librarians on the one hand, and as guides for evaluating and comparing collections by experts and subject specialists on the other hand. Something unexpected was injected, however.

The definition of a research collection seems to have been altered, probably unintentionally, to imply the service status of an individual library rather than to imply the literature status, namely the degree of completeness of a library in subject content. Two factors, related, but not within the purview of the study, apparently influenced the thinking of those engaged in reporting their collections in terms of research potential. These factors are: 1) the needs of the agency served in relation to its mission; and 2) the effectiveness of the service given with the collection at hand. In other words, a collection, if it satisfies the needs of its users, is a research collection, regardless of its size or quality, in the opinion of many respondents to the questionnaire.

Thus, any reviewer or evaluator faces a dilemma. A number of questions arise such as:

1) Can a satisfactory formula be devised for evaluating Federal libraries
2) Can a library reporting a small number of volumes in a certain subject area be termed a research library when compared with

another library reporting a much larger collection

3) What has been the experience of others in attempting to evaluate subject collections

4) What should be the approach in evaluating and what factors should be considered

5) What standards are applicable

6) Is there an existing bibliography on standards for evaluating collections

In consequence, a request for extension of time on the original contract was granted in order that an investigation might be undertaken to consider possible answers to these questions and to determine the feasibility of formulating a series of criteria for assessing research collections in Federal libraries. Hopefully, the findings will be useful in any further study that may be undertaken on the data reported by 188 Federal libraries.

The direction of the investigation was based on a four-stage approach:

1) review the literature for relevant information

2) enumerate and describe available guides and criteria, and evaluate their possible usefulness as components of, or contributions to standards for measurement

3) formulate test standards

4) test their application in a selected number of libraries

Part I of this supplemental report is devoted to a discussion of the topics mentioned above. Part II is a bibliography including references selected from the hundreds reviewed as being most applicable and pertinent to evaluating library collections.

Part I - Investigation of Standards for Library Collections

1. Literature Review

A review of the literature has provided an insight into many facets of collection evaluation. It has also heightened the impression that evaluation of a library collection can be approached from two angles, each with a different set of criteria some elements of which are the same and some of which are not. One angle of approach is from that of the builder of a collection, presumably a librarian. The other angle of approach is from that of an evaluator, presumably one who has had no prior connection with the collection and who examines it objectively for entirely different reasons than that of the librarian.

In building a collection the following criteria may be contributing factors, either partially or totally, depending on the individual library:

acquisition policy
budget limitations
geographical location
space
role in local, state or national cooperative effort
requirements, mimimum or maximum, based on needs or mission of the clientele served
selectivity versus comprehensiveness
importance of weeding
professionalism of the librarian

In evaluating a collection tests or questions connoting value of, or effectiveness of use are applied such as: Is the collection

broad, varied, authoritative, up-to-date
supplemented by source, monographic and periodical material for advanced study and research

sufficient for specialized and technical fields of
interest to the agency with which associated
being expanded so as to fill in the gaps
weeded efficiently to keep it solid and current
supplemented but not replaced by interlibrary loans
acquiring enough new books to keep abreast of advances
in the fields of interest

About the time of preparation for a review of the literature two eye-catching sentences appeared in a summary report of a meeting of the Association of Research Libraries. Tom Bertone, in speaking of a progress report on a University Library Management Study undertaken by Booz, Allen and Hamilton is said to have indicated that "evaluations are difficult for they tend only to reflect comparisons." He also posed the question, "But are 'the best' libraries good, too good, or bad".[1]

These sentences serve well to summarize the prevailing opinion.

Judging from remarks made by various individuals one of the most elusive and sensitive areas in library development and service to survey is that of the resources of libraries. Considerable attention has been directed towards standards and criteria for, and surveys of, academic libraries. Research libraries, as such, have also had their share of attention and there are a few articles to be found on military academic libraries.

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1 Hamer, E.E. Report on the Seventy-fourth Meeting of the Association of Research Libraries Held in Atlantic City. College and Research Libraries News no. 9, p. 327, October 1969.

There are many, many survey reports of individual libraries but the information therein relates more to accreditation standards, circulation statistics and number of volumes rather than to evaluation. This may be so because standards for measuring circulation statistics and for comparing sizes of libraries are more readily available and have been generally accepted as standards for measurement. Evaluations are usually subjective and a subjective evaluation does not qualify as a standard. Generally, products and services associated with evaluating a library collection are intellectual and therefore not mathematically or quantitatively definable.

Since university and college library collections are more nearly similar to Federal library collections the evaluation surveys of some of them are of special interest. From them certain deductions can be made.

There appears to be a common pattern for evaluating library holdings through such measurements as:

checking the resources against lists or bibliographies
seeking opinions of faculty members or subject experts on the strength and limitations of collections
examining user's difficulties in obtaining materials needed for daily work
measuring the collections against the holdings of other research libraries

2. Criteria and Guides

a. Criteria

R.W. Burns, Jr.,[2] in reporting on methodology, criteria and guides in connection with his evaluation of the University of Idaho Library makes some particularly pertinent statements worth recording for application to Federal libraries. Following the question, "What are the quantifiable requirements, if any, for determining the adequacy of a science/technology library and how are they to be measured?", he says:

> "There is no single criterion, other than the ability to satisfy a certain percentage of the demands made upon it, for determining the adequacy of a library collection. There are, however, a number of quantitative standards which, when taken together, offer one a general perspective of the collection and a better concept of that elusive factor 'adequacy.' These are as follows: the holdings of the library can be compared with titles listed in standard library checklists, with the holdings of other libraries known for their competence in a field, with lists of journals covered by indexing/abstracting services for the discipline, with checklists of recommended books and journals for a particular discipline published by professional societies, with the references cited in terminal bibliographies, and against lists of their own publications issued by professional societies. Admittedly, each of these constitutes a quantitative measure. However, the fact that they are also measures to a degree of user satisfaction (ability to locate a given item) and include the so-called 'standard or best lists' should lend to them a qualitative nature as well as a certain degree of credence. Another point worth considering here is the ability of the Library to satisfy requests made for items listed in terminal bibliographies. Of all the criteria listed this, together with the selective lists and guides prepared by professional groups, come closest to being qualitative in nature, since both are defined and inclusion is presumably limited to the 'best' and most 'pertinent' to the subject discussed. Inclusion in such a bibliography is therefore at least partially a qualitative matter, and library holdings of these titles then become of related qualitative significance. Granted that this assumption

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2. Burns, R.W., Jr. Evaluation of the Holdings in Science/Technology in the University of Idaho Library. Moscow, University of Idaho, June 1968. 52 p. (University of Idaho Library. Publication no. 2)

is not always valid and granted that anyone who buys a title - either journal or monograph - simply because it appears on a given list is less than intelligent, we at least have some yardsticks against which to measure the value of our collection - remembering, however, that our library collection must be evaluated in the context of the curricular pattern and research interests at Idaho.

"Undoubtedly there exists a definite relationship between the size of a given collection and the ability of that collection to respond to the needs of its clientele. This can and should be expressed in terms of a probability. The larger the collection becomes, the greater is the probability that it will meet the needs of its patrons, assuming the collection has been intelligently selected. But since the Library must be concerned with limitations of time, staff, money, and space, the problem becomes one of determining the optimum size. Essentially, what is being measured then is not the quality or size of a collection, but the probability that a given group of books and serials will be able to satisfy the needs of its clientele.

"The Library is fully cognizant of the pitfalls and fallacies involved in any quantitative evaluation of library facilities. Nothing can be quite so misleading as statistics. This is especially true for a library collection where quantitative figures bear little relationship, other than an increase in the probability of satisfaction, to the quality of the collection. The author is not unmindful of this situation. However, while figures do not give the whole story they do form a significant portion of the story and any attempt to determine a collections's value to its public must include some statistical information.

"A final word should be said in regard to the use of checklists. No library should accept everything mentioned in any given list simply because it appeared on that list. This would soon lead to national disaster with libraries becoming carbon copies of one another. Each library must seek its own individuality in terms of the people who are to use the collections. Lists are at best guides and not authorities. Here the matter of judgement is critical to the growth of a significant library collection. And it should be emphasized again that the entire selection process is best thought of as a continuing dialogue between librarians, faculty, and students in

their pursuit of a common goal.- excellence.

"What Are The Criteria. The criteria against which we shall measure our Library are as follows:

1) How do our holdings compare with lists of recommended library materials published by the various professional societies?
2) How many of the publications issued or sponsored by these professional societies does the Library receive?
3) What percentage of the items cited in significant terminal bibliographies is the Library able to supply?
4) What index and abstract coverage is available for a discipline and how adequate is our coverage?
5) What percentage of the serials covered by the significant indexing or abstracting services can the Library supply for a given discipline?
6) How many of the publications (both serial and monographic) mentioned in the so-called 'standard' checklists can we provide?
7) How well do Idaho's holdings compare with the guides to the literature (both continuing and non-recurring) which have been published?"

b. Guides

Hundreds of lists and bibliographies useful for checking the adequacy of completeness of library collections are available. Unfortunately, only a small percentage are of recent date and many subjects are missing. This fact should not be construed as indication that these subjects have never received bibliographic attention. Many may be located through the more comprehensive bibliographic compilations such as Besterman (10), Collison (25) or Winchell (80), plus Bibliographic Index (12) and Index Bibliographicus (39).

There is not likely to be a ready-made list containing titles of monographs, serials, maps, government documents, abstracting and

indexing services, reference sources, etc. having direct relationship to the library collection under study. The decision must first be made as to what factors are to be considered in the checking or evaluating process. Are new titles important, for instance? Should the collection contain early works on certain subjects? Who are the important authorities in the subject area in which the library specializes? What abstracting and indexing services should be available? Are current periodicals important?

Following answers to these questions a selection can be made from available checking sources, many of which are arranged in accordance with Dewey classification so that the location of material by subject is not difficult. The resulting checklist will be a composite comprised of titles obtained from current listings of new books such as Booklist and Subscription Books Bulletin(18), Book Review Digest(17), British Book News (19), Choice (24), and Subject Guide to Books in Print (65); from lists of periodicals compiled by such names as Brown(21), Fleurent (29) and Ulrich (72); from subject guides and core lists prepared by individuals as well as those authorized by organizations such as the American Institute of Physics. A Guide to the World's Abstracting and Indexing Services in Science and Technology (75) should also be among the sources considered.

The objective in preparing the list of selections which follows has been to include, in so far as they are available, recent lists

pertaining to subjects reported E or Rs by one or more Federal libraries. It is these subjects that are most likely to be checked, compared and evaluated.

GUIDES TO LISTS AND BIBLIOGRAPHIES

USEFUL FOR EVALUATING LIBRARY COLLECTIONS

1. ALBION, ROBERT GREENHALGH. Naval and maritime history; an annotated bibliography. Mystic, Conn., Marine Historical Association, 1963. 3d ed. 230 p.

2. AMERICAN BOOK PUBLISHING RECORD, v.1, Feb. 1960- New York, Bowker. (monthly)
   Includes the same information as that given in the weekly lists in Publishers' Weekly, cumulated monthly and rearranged by subject according to Dewey Decimal numbers.

3. AMERICAN HISTORICAL ASSOCIATION, Guide to historical literature. New York, Macmillan, 1961. 962 p.
   A selective, annotated bibliography of treatises and source materials, arranged in large subject and country groups, each group selected and described by specialists. Within each section, materials are arranged as practicable by form, e.g., bibliographies, encyclopedias and dictionaries, general and specialized histories, biographies, government documents, printed collections of sources, etc.

4. AMERICAN INSTITUTE OF PHYSICS. Checklist of Books and Periodicals for an Undergraduate Physics Library. New York, The Institute, 1966. 96 p.

5. ANDRIOT, JOHN L. Guide to U.S. Government serials and periodicals. [McLean, Va.], Documents Index, 1962- 3v.

6. ANTHONY, L.J. Sources of information on atomic energy. New York, Pergamon Press, 1966. 245 p.

7. ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX. ELECTRONICS GROUP. Handlist of basic reference materials for librarians and information officers in electrical and electronic engineering. London, ASLIB, 1964. 48 p.

8. BAKER, EDWARD ALAN and FOSKETT, D.J. Bibliography of food: a select international bibliography of nutrition, food and beverage technology and distribution, 1936-56. London, Butterworth's Scientific Publications, 1958. 331 p.
   Aims to include "most of the significant books and pamphlets on nutrition, food economics and food technology published in the English language together with a representative selection of material from most foreign sources".

9. BARROW, JOHN GRAVES. A bibliography of bibliographies in religion. Ann Arbor, Mich., Edwards Bros., 1955. 489 p.
Brings together all separately published bibliographies in the field of religion from the 15th century to 1950, in many languages.

10. BESTERMAN, THEODORE. A world bibliography of bibliographies and of bibliographical catalogues, calendars, abstracts, digests, indexes and the like. Lausanne, Societas Bibliographica, 1965. 4th ed. 4 vols.
A classified bibliography of almost 85,000 separately published bibliographies of books, manuscripts, and patent abridgments. International in scope.

11. BESTOR, GEORGE CLINTON and JONES, HOLWAY R. City planning; a basic bibliography of sources and trends. Sacramento, California Council on Civil Engineers and Land Surveyors, 1962. 195 p.
An annotated bibliography of more than 1000 entries alphabetically arranged by title within subject groups. Emphasis is on English language publications. Special lists include: A basic library for planning commissions; A selected list of services and periodicals.

12. BIBLIOGRAPHIC INDEX; A cumulative bibliography of bibliographies, 1937- New York, Wilson, 1938- (Semi-annual)
An alphabetical subject arrangement of separately published bibliographies, and bibliographies included in books and periodicals.

13. BLACKWELDER, R.S. Books on zoology (Including natural history, physiology, genetics, parasitology, ecology, paleontology, entomology, etc.) Carbondale, Ill., Society of Systematic Zoology, 1962. 111 p. (Supplement 1965)

14. BLAKE, JOHN B. and ROOS, CHARLES, eds. Medical reference works, 1679-1966: a selected bibliography. Chicago, Medical Library Association, 1967. (Medical Library Association Publication No.3)

15. BLANCHARD, J. RICHARD and OSTVOLD, HAROLD. Literature of agricultural research. Berkeley, University of California Press, 1958. 231 p. (University of California Bibliographic Guides, no. 1)
A classified, annotated guide listing bibliographies, abstract journals, indexes, encyclopedias, dictionaries, handbooks, directories, periodical lists, historical and biographical works, statistical services, etc. The general fields covered are: agriculture in general, plant sciences, animal sciences, physical sciences, food and nutrition, and social sciences.

16. BONI, ALBERT. Photographic literature: an international bibliographic guide to general and specialized literature on photo-

graphic processes, techniques, theory, etc. New York, Morgan & Morgan, 1962. 333 p.
A listing of some 12,000 books, pamphlets, and periodical articles.

17. BOOK REVIEW DIGEST, 1905- New York, Wilson, 1905- v.1. (monthly)
A digest and index of selected book reviews in more than 75 English and American periodicals.

18. BOOKLIST AND SUBSCRIPTION BOOKS BULLETIN. 1905- Chicago, American Library Association, 1905- v.1- (semimonthly, monthly in August)
Annotations describe, evaluate, and indicate the kind of library for which the book is recommended.

19. BRITISH BOOK NEWS: a guide to book selection. London, British Council, 1940- (monthly)
A selective, annotated list of "best books" arranged accordint to the Dewey Decimal Classification.

20. BRITTAIN, ROBERT P. Bibliography of medico-legal works in English. South Hackensack, N.J., Fred B. Rothman, 1962. 252 p.

21. BROWN, PETER and STRATTON, G.B.,eds. World list of scientific periodicals published in the years 1900-1960. Washington, D.C. Butterworth, Inc., 1963-1965. 4th ed. 3 v.
Lists more than 60,000 titles of periodicals concerned with the natural sciences and technology.

22. BURNS, ROBERT W., JR. Literature resources for the sciences and technologies: a bibliographic guide. Special Libraries 53: 262-271. May-June 1962.
Some brief annotations included.

23. CHAMBERLIN, MARY WALLS. Guide to art reference books. Chicago, American Library Association, 1959. 418 p.
Lists more than 2500 titles, ranging from ready-reference to highly specialized works in the Fine Arts (N) section of the Library of Congress classification scheme, i.e. architecture, painting, sculpture, prints and engravings, drawings and the applied arts.
The last 3 chapters describe: Documents and sources, periodicals (some 250 titles) and series of art books.

24. CHOICE: books for college libraries. A publication of the Association of College and Research Libraries. Middletown, Conn., Olin Library, Wesleyan University, 1964- v.1- (monthly, except bimonthly July-Aug)

A book review journal planned to assist college libraries in the selection of current books. Annotations are written by a large panel of consultants.

25. COLLISON, ROBERT L. Bibliographies, subject and national: a guide to their contents. London, Crosby Lockwood, New York, Hafner, 1962. 2d ed. rev. & enl. 185 p.

This handbook contains 300-400 carefully selected and annotated references to bibliographies.

Part 1 covers subject bibliographies arranged in Dewey Classification order, and Part 2, universal and national bibliographies.

26. COLLISON, ROBERT L. Dictionaries of foreign languages; a bibliographical guide to the general and technical dictionaries of the chief foreign languages... New York, Hafner, 1955. 210 p.

Includes special lists of French, German, Italian, Spanish, Russian and Scandinavian dialect dictionaries. An appendix gives technical dictionaries in various languages arranged by subject.

27. COMAN, EDWIN L. Sources of business information. Berkeley, University of California Press, 1964. 330 p.

Lists bibliographies, compends, handbooks, yearbooks and annual summary number of periodicals, general and specialized books, and periodicals. Covers generalities, statistics, finance, real estate and insurance, accounting, automation, management, personnel and industrial relations, marketing and advertising, public relations, basic industries, and foreign trade.

28. DIEHL, KATHARINE SMITH. Religions, mythologies, folklores; an annotated bibliography. New Brunswick, N.J., Scarecrow Press, 1962. 2d ed. 573 p.

Includes books of general and specific reference, literatures, literary and historical guides, various scriptures and commentaries, records of institutional accomplishment, and biographies.

29. FLEURENT, C.H.A. comp. World medical periodicals. New York, World Medical Association, 1961. 3d ed. 407 p.

Includes more than 5800 periodicals relating to medicine, pharmacy, dentistry, and veterinary medicine, as well as to hospital buildings, administration and equipment.

30. FRY, BERNARD M. and MOHRHARDT, FOSTER E.,eds. A guide to information sources in space science and technology. N.Y. Interscience, 1963. 579 p. (Guides to Information Sources in Science and Technology, v.1.)

Treats abstracting and indexing services, information centers and services, reference books and specific subjects in space science.

31. GRAY, RICHARD A. Serial bibliographies in the humanities and social sciences. Ann Arbor, Mich., Pierian Press, 1969. 345 p.
Includes several hundred separately published bibliographies as well as those in journals. Arrangement is by Dewey Decimal Classification.

32. GUNTHER, EDGAR and GOLDSTEIN, FREDERICK A. Current sources of marketing information: a bibliography of primary marketing data. Chicago, American Marketing Association, 1960. 119 p. (A.M.A. Bibliography Series no. 6)
An annotated listing of approximately 1200 books, journals, reports, and documents; classified: first by generalities, then according to branch of commercial or industrial activity.

33. HARMON, ROBERT B. Political science: a bibliographical guide to the literature: Supplement 1968. Methuen, N.J., Scarecrow Press, 1968. 331 p.

34. HAYDOCK, ELEANOR. A guide to the literature of electronics. Vancouver, School of Librarianship, University of British Columbia, 1963. 12 p.

35. HEADY, FERRELL and STOKES, SYBIL L. Comparative public administration; a selective annotated bibliography. Ann Arbor, University of Michigan Press, 1960. 2d ed. 98 p.
The listing of some 950 books and periodical articles covers such subjects as: modern bureaucracies, organization and administrative relationships; personnel management; administration and the public.

36. HEENAN, W.F. An information guide to selected books of biochemistry and related subjects. Washington, D.C. Biological Sciences Communication Project, 1968. 109 p.
This is a selected listing of information sources in biochemistry and related subjects which generally covers monographs and advanced texts published between 1965-1967.

37. HILER, HILAIRE and HILER, MEYER. Bibliography of costume; a dictionary catalog of about eight thousand books and periodicals... ed. by Helen Grant Cushing, assisted by Ada V. Morris. New York, Wilson, 1939. 911 p.

38. HUMM, HAROLD J. Bibliographic data useful in the study of marine algae. Gloucester Point, Va., Virginia Institute of Marine Science, 1962. 11 p. (Virginia Institute of Marine Science Scientific Report No. 29)

39. INDEX BIBLIOGRAPHICUS. La Haye, Federation Internationale de Documentation, 1959-64. 4th ed. v. 1-2.

Contents: v.1, Science and technology; v.2, Social sciences. In preparation, v.3, Humanities; v. 4, General bibliographies.

40. INSURANCE SOCIETY OF NEW YORK. LIBRARY. Life insurance catalog of the Library of the Insurance Society of New York. Boston, G.K. Hall, 1960. 352 p.

This is the subject catalog of a library which, in 1960, contained a comprehensive collection of about 60,000 books, pamphlets and periodicals.

41. INTERNATIONAL ASSOCIATION OF LAW LIBRARIES. The law in the United States of America; a selective bibliographical guide by Joseph L. Andrews and others. New York, New York University Press, 1965. 100 p.

Lists important treatises, textbooks and monographs.

42. INTERNATIONAL ATOMIC ENERGY AGENCY. List of periodicals in the field of nuclear energy. Vienna, The Agency, 1963. Rev. ed. 144 p.

43. INTERNATIONAL ATOMIC ENERGY AGENCY. Nuclear propulsion [compiled and edited by P.L. Nikiten] Vienna, The Agency, 1961. 227 p. (Bibliographical Series No. 3)

44. INTERNATIONAL STATISTICAL INSTITUTE. Bibliography of basic texts and monographs on statistical methods, 1945-1960, ed. by William R. Buckland and Ronald A. Fox. New York, Hafner, 1963. 2d ed. 297 p.

Lists nearly 200 books, written in English, together with excerpts of reviews from statistical journals.

45. JENKINS, FRANCES BRIGGS. Science reference sources. Cambridge, Mass., MIT Press, 1969. 5th ed., 231 p.

Presentation of general science reference works is followed by highly selected lists of general aids in mathematics, physics, chemistry, astronomy, earth sciences, biological sciences, agricultural sciences, and engineering sciences.

46. KAPLAN, STUART R. ed. A guide to information sources in mining, minerals, and geo-sciences. New York, Interscience Publishers, 1965. 599 p.

47. KERKER, ANN E. and MURPHY, HENRY T. Biological and biomedical resource literature. Lafayette, Ind., Purdue University, 1968. 226 p.

Emphasis is on biomedicine, but botany, parasitology and zoology are given consideration. Major treatises and taxonomic tools are listed as well as more specialized works.

48. KIELL, NORMAN. Psychoanalysis; psychology and literature: a bibliography. Madison, University of Wisconsin Press, 1963. 223 p.

49. LINS, L. JOSEPH and REES, ROBERT A. Scholars guide to journals of educational psychology. Madison, Wis., Dembar Educational Research Services, Inc., 1965. 150 p.

50. LONDON, UNIVERSITY. INSTITUTE OF EDUCATION. A guide to the literature of education, by S.K. Kimmance. London, 1961. 86 p.

51. MALCLES, LOUISE-NOELLE. Manual de bibliographie. Paris, Presses Universitaires de France, 1963. 328 p.
    The French "Winchell". An abridgment of the author's Les Sources du Travail Bibliographique.

52. MALINOWSKY, H.R. Science and engineering reference sources. A guide for students and libraries. Rochester, N.Y., Libraries Unlimited, 1967. 213 p.

53. MARTON, TIBOR W. Foreign language and English dictionaries in the physical sciences and engineering; a selected bibliography 1952 to 1963. Washington, U.S. Government Printing Office, 1964. (National Bureau of Standards. Miscellaneous Publication 258)
    Lists over 2800 unilingual, bilingual and polyglot dictionaries, glossaries and encyclopedias.

54. MASON, CHARLENE. Bibliography of library automation. ALA Bulletin 63(8):1117-1134. September 1969.
    This is a selective bibliography covering journal literature, trade publications and other documents, most notably technical reports and is limited to publications dated 1967 and 1968.

55. McNIFF, PHILIP J. comp. Catalogue of the Lamont Library, Harvard College. Cambridge, Mass., Harvard University Press, 1953. 562 p.
    This catalog is used extensively for checking college and university libraries. It contains 39,000 entries representing "a live, working collection to serve the required and recommended reading needs of Harvard undergraduates in addition to a good general collection of books".

56. MELLON, M.G. Chemical publications; their nature and use. New York, London, McGraw-Hill, 1965. 4th ed. 324 p.
    Describes the principal sources for reference and research, including guides, bibliographies, directories, patent searching, periodicals, and documents.

PAGE 22 IS NOT AVAILABLE
FOR FILMING AT THIS TIME

67. SMITH, ROGER C. and PAINTER, R.H. Guide to the literature of the zoological sciences. Minneapolis Burgess Publishing Company, 1966. 7th ed. 238 p.

68. STEWART, CHARLES F. and SIMMONS, GEORGE B. A bibliography of international business. New York, Columbia University Press, 1964. 603 p.

69. STRAUSS, LUCILLE J., STRIEBY, IRENE M. and BROWN, ALBERTA L. Scientific and technical libraries; their organization and administration. New York, Interscience Publishers, 1964. 398 p.
Appendix of more than 80 pages lists basic reference works, periodicals and bibliographies by subject.

70. TAPIA, ELIZABETH W. Guide to metallurgical information. New York, Special Libraries Association, 1961. 85 p. (SLA Bibliography No. 3)
International in coverage. Emphasis is on publications from 1940-1960.

71. THOMPSON, ESTHER E. Oceanography, a report bibliography. Arlington, Va., U.S. Defense Documentation Center, 1963. 355 p.
An abstract bibliography on oceanography including biological, chemical, economic, physical and practical, and applied oceanography as well as marine geology and scientific research in these areas.

72. ULRICH'S INTERNATIONAL PERIODICALS DIRECTORY. A classified guide to a selected list of current periodicals, foreign and domestic. New York, Bowker, 1969. 13th ed., 2 v., 1,659 p.
Subject arranged profiles of more than 40,000 scientific, technical, medical, arts, humanities, business and social sciences periodicals currently published throughout the world.

73. UNION LIST OF MILITARY PERIODICALS. Maxwell Air Force Base, Ala., Air University Library, 1960. 121 p.

74. U.S. LIBRARY OF CONGRESS. SCIENCE AND TECHNOLOGY DIVISION. Aeronautical and space serial publications; a world list. Washington, 1962. 255 p.
A listing, with bibliographical information, of 4551 titles originating in 76 countries.

75. U.S. LIBRARY OF CONGRESS. SCIENCE AND TECHNOLOGY DIVISION. A guide to the world's abstracting and indexing services in science and technology. Washington, 1963. 183 p. (National Federation of Science Abstracting and Indexing Services. Report no. 102)
Contains 1855 titles originating in 40 countries. Covers the pure and applied sciences, including medicine and agriculture.

76. U.S. NATIONAL LIBRARY OF MEDICINE. Drug literature; a factual survey on "the nature and magnitude of drug literature"... Washington, Government Printing Office, 1963. 171 p.
Includes: selected list of monographs on pharmacy; world list of pharmacy periodicals; composite list of journals of pharmaceutical interest; drug information sources, a world list.

77. WANG, JEN-YU and BARGER, GERALD L. eds. Bibliography of agricultural meteorology. Madison, University of Wisconsin Press, 1962. 673 p.

78. WELLISCH, H. comp. A selected bibliography on fluid mechanics, hydrology, and hydraulic engineering, 1950-1960. Tel Aviv, Water Planning for Israel, 1961. 69 p.

79. WHITE, CARL M. and ASSOCIATES. Sources of information in the social sciences; a guide to the literature. Totowa, N.J. Bedminster Press, 1964. 498 p.
Treats social science in general; history; economics and business; sociology; anthropology; psychology; education; and political science.

80. WINCHELL, CONSTANCE M. Guide to reference books. Chicago, American Library Association, 1967. 8th ed. 762 p.
There is also a Supplement I covering period 1965-1966.
Arrangement is (A) General reference; (B) Humanities; (C) Social science; (D) History; (E) Pure and Applied sciences.

81. YOUDEN, W.W. Computer literature bibliography, 1946-1963. Washington, Government Printing Office, 1965. 463 p. (National Bureau of Standards. Miscellaneous Publication 266)

3. Test Standards

Ideally, there is need for universally agreed-upon yardsticks. These should probably be combinations of objective and subjective standards. It would be helpful to devise a truly objective method for judging adequacy of Federal library collections. Presumably, any such scheme would have to be based on various kinds and degrees of quantitative and qualitative measures, but hopefully, objective evaluations. It is tempting to consider trying to organize measures and means of evaluation into such a scheme. It might be possible to create an appearance of validity. Unfortunately, it would be false validity because too little is known about the various environmental factors involved, e.g., budget, mission, space and various other determinants.

The approach to evaluation depends on the reason for evaluation. Bearing in mind the standard, or the three definitions of library collections which were the basis for reporting data, the only solution to the problem, if indeed, it is a problem, or the only choice of approach, is to institute the use of a yardstick for measurement and comparison of the 188 Federal libraries involved in the study. That yardstick is the checklist. It is easily available through the choice of the one, or ones, most appropriate for the subject area to be checked or examined.

If it is possible to evaluate each library in its own setting rather than by comparison or norms then the following criteria are suggested:

Quality

compare with published lists of key literature or citations in the library's most used journals.

note record of library's ability to fill requests

determine whether or not collection is sufficient to meet requirements.

Quantity

correlate circulation statistics and reference needs with amount of material available in certain subject areas

examine collection in terms of annual additions to stock rather than total stock to indicate relevance of what is being provided and whether it is up-to-date

Identification with supporting agency needs

what access to world's intellectual and creative resources does the agency's program require

to what extent are these resources available

how can their availability and accessibility be increased and their use encouraged

Acquisition policy

is there a policy

is it based on a long term program or does it involve spasmodic purchasing on demand

4. Application of Test Standards

Only one standard measurement, the checklist test, has been applied to Federal libraries, to only a sampling of locations and for only a few subjects. Results have been somewhat puzzling.

Titles of books and periodicals in several subject areas represented by two or more libraries were selected form standard reference tools,[3] then were listed and sent to libraries reporting holdings in the corr-

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3. Biological Sciences Communication Project. Revised List of Titles Suggested for Placement in Textbook Libraries, Higher Education. Washington, D.C., 1969.
Prakken, S.L., ed. Subject Guide to Books in Print 1961. New York, Bowker, 1961.
Ulrich's International Periodicals Directory 1967-168. New York, Bowker, 1967.
Winchell, C.M.. Guide to Reference Books. 8th ed. Chicago, American Library Association, 1967.
Zell, Hans. New Reference Tools for Librarians. Oxford, Maxwell, 1964.

sponding subjects.

A case, in point, is the subject Anamnia (Cyclostomes, fishes, amphibians) Dewey class number 597. This subject was reported by four libraries, two of them of considerable size, one of small size, and one in between. Checking of the list of 98 titles sent to them turned out as follows:

Library	Code	Collection Designation	No. of titles checked
Smithsonian	910.000	E	49
Interior	594.000	Rs	82
Bur. Commercial Fisheries Honolulu	594.050	Rs	no reply
Naval Radiological Lab. San Francisco	287.415	Rs	47

As will be noted, the smallest library with a collection rated Rs by the librarian has only two fewer titles on the list than the large library ranked E by its reporting librarian.

The subject of Microbiology (Dewey class no. 576) produced interesting information when tested by a sample of 82 titles. An E rated collection has 75 of the 82 titles and 7 Rs rated libraries reported numbers of titles in the following sequence: 23; 18; 40; 36; 39; 48; and 47.

Political science (320) remains an enigma. Two libraries reporting Rs collections in the subject were asked to check a list of 145 titles. One library had 6 of them; the other had 17.

A somewhat surprising response resulted from the checking of 250 titles on Statistical Methods and Statistics (310 and 311). The library

claiming an E collection checked only 40 titles. Three other libraries reporting Rs collections checked 55; 67; and 49 titles respectively.

Checking of other subject lists provided the following results:

Library	Code	Collection Designation	No. of titles checked
Subject: Insects (595.7) No. of titles in List -37			
Army Natick Lab.	231.015	Rs	10
NAL	675.000	E	33
Smithsonian	910.000	E	23
Subject: Botany (580) No. of titles in List - 81			
Smithsonian	910.000	E	34
NAL	675.000	Rs	80
Subject: Radiobiology (574.1915) No. of titles in List - 52			
NLM	810.000	E	49
Bur. Fisheries, Beaufort, N.C.	594.025	Rs	8
Def. Atomic Support Agency	180.015	Rs	29
Subject: Microscopes and Microscopy (578) No. of titles in List - 64			
NLM	810.000	Rs	44
Publ Health Serv., Hamilton, Mont.	802.095	Rs	16
Subject: Experimental Psychology (152) No. of titles in List - 41			
CSC	916.000	E	11
NLM	810.00	Rs	32

Library	Code	Collection Designation	No. of titles checked
	Subject: Biochemistry (574.192) No. of titles in List - 132		
NAL	675.000	Rs	88
Army Natick Lab.	231.015	Rs	97
NAL, Ames	675.015	Rs	66
Walter Reed Army Inst.	231.310	Rs	96
	Subject: Biology (574) No. of titles in List - 309		
Smithsonian	910.000	E	76
NAL	675.000	no rating	137

The conclusion reached, following use of the checklist test is, that it is practical, though the results are indicative rather than conclusive.

Part II

A BIBLIOGRAPHY ON STANDARDS FOR EVALUATING LIBRARIES

compiled by

Signe Ottersen

This bibliography of 138 references is the result of a search of the literature for informative statements which might be helpful in determining guidelines for the evaluation of subject collections in Federal government libraries.

Much has been written on standards but there is less in the nature of significant facts based on actual experience in developing and applying criteria. Accordingly, the references included are only those which have been selected because of their contribution to (1) an understanding of the elements of library standards and criteria necessary for subject evaluation, and (2) methodology suitable for application to the evaluation task. A few references were not available for examination and are so marked. They appear, from the titles to be of value.

The arrangement is alphabetical, by author, and each entry includes a descriptive annotation or an abstract from the contents of the article or book cited in order to call attention to a significant portion of it.

A BIBLIOGRAPHY ON STANDARDS FOR EVALUATING LIBRARIES

1. Adams, Velma Lee. GROWTH OF A LIBRARY. Arkansas Libraries 12: 7-9. October, 1955.
   In seeking accreditation by the North Central Association, Southern State College, Magnolia, Arkansas, made a study of the library and its collection. Faculty experts made recommendations for additions and discards and library holdings were compared with appropriate lists.

2. Adelman, George. ASK THE MEN WHO KNOW; THE NEUROSCIENCES RESEARCH PROGRAM GOES TO THE BEST PEOPLE IN THE FIELD AND ASKS THEM. Library Journal 94(7):1413-1415. April 1, 1969.
   Specialists in the neurosciences will have to be consulted in their field since the literature is too great for a librarian to cope with.

3. American Library Association. STANDARDS FOR COLLEGE LIBRARIES. Chicago, Ill., American Library Association, 1959. (not examined)

4. American Library Association. Public Libraries Division. Coordinating Committee on Revision of Public Library Standards. PUBLIC LIBRARY SERVICE-A GUIDE TO EVALUATION WITH MINIMUM STANDARDS. Chicago, American Library Association, 1954.
   Specific standards, defining minimum adequacy rather than goals, are based on best professional opinion checked by statistical study where needed and possible. Among standards applicable to collections are: (1) Library program is focused upon clear and specific objectives; (2) Materials are selected, retained and discarded in light of conscious objectives and written policy statement covers selection, maintenance of material; (3) Systematic removal of non-useful material.

5. Asheim, Lester, and others. THE HUMANITIES AND THE LIBRARY; PROBLEMS IN THE INTERPRETATION, EVALUATION AND USE OF LIBRARY MATERIALS. Chicago, American Library Association, 1957. 304 p.
   A textbook about the contents of books and the criteria for evaluating them.

6. Association of College and Research Libraries. QUANTITATIVE CRITERIA FOR ADEQUACY OF ACADEMIC LIBRARY COLLECTIONS. Chicago, American Library Association, 1965. 12 p. (not examined)

7. Association of College and Research Libraries. Committee on Liason with Accrediting Agencies. GUIDE TO METHODS OF LIBRARY EVALUATION. College and Research Libraries News 9(5):293-299. October 1968.

The following evaluation methods are offered as aids in judging the adequacy of an academic library: use of selected lists, consultation with specialists and sampling of students about ease in obtaining sources. The coverage must be adequate for courses offered and research in progress.

8. Association of College and Research Libraries. Committee on Standards. STANDARDS FOR COLLEGE LIBRARIES. College and Research Libraries 20(4):274-283. July 1959.
---Same. Drexel Library Quarterly 2(3):251-263. July 1966.
A summary of the standards for the book and periodical collection follows: (1) The collection should meet full curriculum needs of the undergraduate and graduate and support faculty in keeping abreast of advances, or for independent study. (2) The collection should contain "standard works which represent the heritage of civilization". (3) There should be a strong and up-to-date reference collection in all major fields of knowledge - and not restricted to curriculum. (4) Periodical collections should meet requirements of collateral reading of undergraduate and in some measure meet research needs of advanced students and faculty. (5) "Printed manuscript, and archival materials pertaining to the institutions of which the library is a part should be collected and preserved". (6) No censorship of librarian's selection on all sides of a controversial issue. (7) Quality of collection should not be sacrificed to unnecessary duplication. (8) Obsolete materials should be weeded with advice from faculty members. (9) Library holdings should be checked frequently against standard bibliographies. (10) The size is determined by an analysis of college statistics - curriculum, numbers of students, faculty, etc.

9. Association of College and Research Libraries. Standards Committee. COLLEGE AND UNIVERSITY LIBRARY ACCREDITATION STANDARDS - 1957; comp. by Eli M. Oboler and others. The Association, 1958. 46 p. (ACRL Monograph No. 20)
"This monograph is the first publication in one place of all the requirements for libraries and institutions of higher education specified by the twenty-one professional and six regional accrediting associations recognized by the National Commission on Accrediting."

10. Bach, Harry. EVALUATION OF THE UNIVERSITY LIBRARY COLLECTION. Library Resources and Technical Services 2(1): 24-29. Winter 1958.
The two methods most commonly employed to appraise the adequacy of an academic library are faculty opinion and bibliographic checking. Comparison with other institutions, availability checks and sampling techniques are other procedures. There is a useful bibliography.

11. Bailey, George M. THE ROLE OF THE STANDARDS. Drexel Library Quarterly 2(3):207-212. July 1966.
A general paper on the Standards for College Libraries.

12. Blanchard, J. Richard. PLANNING THE CONVERSION OF A COLLEGE TO A UNIVERSITY LIBRARY. College and Research Libraries 29(4): 297-302. July 1968.
Abstract: "Many new university libraries are being rapidly developed out of older, small college collections. Methods and standards available for the planning of such libraries include the Clapp-Jordan formula for book collections and standards for buildings and book collections used by the State of California. Professor Robert Hayes of the School of Library Service, UCLA, is preparing a formula for the development of collections in University of California libraries. Methods used in planning for the development of the University of California Library, Davis, are described."

13. Bloomquist, Harold. THE STATUS AND NEEDS OF MEDICAL LIBRARIES IN THE UNITED STATES. Journal of Medical Education 38(3): 145-163. March 1963.
No standards for medical libraries have been developed but three medical librarians, Rogers, Esterquist and Meyerhoff suggest collections of 100,000 volumes.

14. Brown, Helen M. THE STANDARDS AND THE COLLEGE LIBRARY IN 1965. Drexel Library Quarterly 2(3):202-206. July 1966.
The mushrooming of college enrollment indicates that some changes in the Standards may be required. The author quotes the following: "Emery M. Foster, Consultant for the Library Services Division of the United State Office of Education, has recently presented to the ACRL Standards Committee a proposal to analyze the Standards by using the statistics now available at USOE.
"In order to reflect <u>quality</u> in the quantity standards, the analysis must include only the statistical characteristics of generally acknowledged good institutions known to have good library services. If the standards can be statistically shown to be the practice of publicly recognized quality libraries, it will be accepted as a valid standard for that type and size of institution."

15. Buck, Paul Herman. LIBRARIES AND UNIVERSITIES, ADDRESSES AND REPORTS; edited by Edwin E. Williams. Cambridge, Harvard University Press, 1964. 172 p.
"...The value of Harvard's great collection can be ascribed in large part to the fact that it has been built up to serve scholars; much of it, indeed has been selected by members of the Faculties...Selection of books for a library like this

calls for an attempt to foresee the future courses of research and to obtain publications that, though they seem insignificant today, will be wanted by scholars tomorrow. The richness of Harvard's holdings is a product of the joint effort of professors and librarians over many generations, and no other library today has the assistance of a community equally well qualified to help build it for the future".

16. Burdick, Charles. LIBRARY AND THE ACADEMIC COMMUNITY. Library Resources and Technical Services 8(2):157-160. Spring 1964.

"In recent years the entire concept of a library's collection has changed from quantity to quality. While a library containing several million volumes has unquestioned merit, its mere size is not positive proof of competence. With care and proper selection, a library can build a superb collection in a given study area. The Hoover Institution at Stanford University with fewer than 200,000 volumes, ranks as a world leader in its fields of endeavor. No longer need a library hide its collective head because of the limited number of books on its shelves."

17. Burns, Norman. ACCREDITING PROCEDURES WITH SPECIAL REFERENCE TO LIBRARIES. College and Research Libraries 10(2):155-158. April 1949.

The author writes: "It is clear, then, that in appraising the worth of an institution it is essential that one begin with the purposes of the institution and proceed from there to examine its program - the curriculum, the faculty, the student, personnel services, the library - in the light of the particular goals which the institution has set for itself. Implicit in this approach is the concept of a qualitative approach rather than reliance on merely quantitative measures."

18. Burns, R.W. EVALUATION OF THE HOLDINGS IN SCIENCE/TECHNOLOGY IN THE UNIVERSITY OF IDAHO LIBRARY. Moscow, University of Idaho Library, 1968. 52 p. Mimeographed.

Among the criteria against which the library was measured were lists of materials published by professional societies, basic lists in various disciplines, holdings of other libraries, availability of indexing and abstracting services and serials covered therein.

19. Carnovsky, Leon. EVALUATION OF LIBRARY SERVICES. UNESCO Bulletin for Libraries 13(10):221-225. October 1959.

In evaluating a collection attention should be paid not merely to the size but to the quality and relation to the purpose of the library.

20. Carnovsky, Leon. MEASUREMENT OF PUBLIC LIBRARY BOOK COLLECTIONS. Library Trends 1(4):462-470. April 1953.
The quality of the book collection can be tested by checking against booklists or bibliographies.

21. Carnovsky, Leon. PUBLIC LIBRARY SURVEYS AND EVALUATION. Library Quarterly 25(1):23-36. January 1955.
ALA's Post-War Standards for Public Libraries (1943) states: "Only to a limited and somewhat mechanical extent can the result of the intricate process of book selection in terms of an actual collection of books be measured by any system of standards." Appraisals can be made by quantitative measures (numbers of books and their distribution by subject or type, or by sample checks against lists of titles - or bibliographies. Although the checklist method is time-consuming the author considers it more desirable than a report on numbers.

22. Carnovsky, Leon. SELF-EVALUATION; OR HOW GOOD IS MY LIBRARY? College and Research Libraries 3(4):304-310. September 1942.
The author says "...a college library is good or not in the degree to which it is equipped to aid in achieving the aims of the college." Many accrediting agencies arbitrarily define the book content of the library. Lists such as Shaw's and Mohrhardt's are comprehensive for colleges and junior colleges but become obsolete quickly.

23. Carnovsky, Leon. STANDARDS FOR SPECIAL LIBRARIES; POSSIBILITIES AND LIMITATIONS. Library Quarterly 29(3):168-173. July 1959.
By the very nature of the "special" library it is difficult to assign standards. Being special, or unique, one can but ask the question as to whether the library supplies the information required by the parent institution.

24. Carter, Mary D. and Bonk, W.J. BUILDING LIBRARY COLLECTIONS. N.Y., Scarecrow Press, 1964, 2d ed. 287 p.
The three important factors in evaluating a collection are: (1) What kinds of books are in the collection and how valuable each is in relation to other books on the subject which are not in the library; (2) are the books in the collection appropriate for the community to be served regardless of how valuable the books may be in an abstract evaluation of their worth; (3) what are the purposes which this particular collection are supposed to accomplish?

25. Chicorel, Marietta. STATISTICS AND STANDARDS FOR COLLEGE AND UNIVERSITY LIBRARIES. College and Research Libraries 27(1): 19-22, 51. January 1966.
Standards for college library book collections are based on

the numbers of students and the numbers of courses given and the amount and kind of research being performed. That there are no standards for university libraries "may be in part due to the fact minimum standards may be interpreted to be maximum standards, and that increases due to population and knowledge explosions cannot be built in". In university libraries the strength of library services is not indicated by numbers of books.

26. Clapp, Verner W. and Jordan, R.T. QUANTITATIVE CRITERIA FOR ADEQUACY OF ACADEMIC LIBRARY COLLECTIONS. College and Research Libraries 26(5):371-380. September 1965.
---Corrigenda. College and Research Libraries 27(1):72. January 1966.
New formulas are developed for estimating the number of volumes required for minimum adequacy by academic libraries of widely differing characteristics.

27. Coale, Robert P. EVALUATION OF A RESEARCH LIBRARY COLLECTION: LATIN-AMERICAN COLONIAL HISTORY AT THE NEWBERRY. Library Quarterly 35(3):173-184. July 1965.
"...bibliographic checking seems to be most feasible way to evaluate its holdings..."

28. Community Studies, Inc. LIBRARIES IN METROPOLIS; A STUDY OF PUBLIC LIBRARY SERVICES IN THE KANSAS CITY AND ST. LOUIS METROPOLITAN AREAS. Kansas City, Community Studies, Inc., 1966.
The Enoch Pratt Free Library list was used in sampling the quality of the reference collections.

29. Cooper, Marianne. CRITERIA FOR WEEDING OF COLLECTIONS. Library Resources and Technical Services 12(3):339-351. Summer 1968.
Criteria for weeding and storage were determined based on age and usage. They were related to goals, resources, organization and administration of the library.

30. Covey, Alan Dale. EVALUATION OF COLLEGE LIBRARIES FOR ACCREDITATION PURPOSES. Dissertation Abstracts 15(10):1863. 1955.
"...Library literature was surveyed for criteria, and Schedule C was tested at a number of accredited California teacher's colleges. Among conclusions presented are the following: an institution should be appraised in terms of its succes in achieving its own stated objectives and in relation to its social patterns as an agency of higher education; a combination of quantitative and qualitative criteria is necessary, but quantitative are to be used only as discussion points rather than as fixed minimal standards; the ALA service load formula appears to be the most satisfactory quantitative Standard; and

the quality of a library staff is indicated by its status within the college." Thesis for Ed.D., Stanford University, 1955.

31. Danton, J. Periam. THE SELECTION OF BOOKS FOR COLLEGE LIBRARIES: AN EXAMINATION OF CERTAIN FACTORS WHICH AFFECT EXCELLENCE OF SELECTION. Ph.D. thesis, University of Chicago, 1935.
Attempts to determine effect of librarians, faculty and book fund policies on quality of book selection for liberal arts college libraries. Charles B. Shaw's A List of Books for College Libraries was used as basis for formulation of a book-collection quality index..." quoted from Cohen's Library Science Dissertations.

32. Danton, J. Periam. THE SUBJECT SPECIALIST IN NATIONAL AND UNIVERSITY LIBRARIES, WITH SPECIAL REFERENCE TO BOOK SELECTION. Libri 17(1):42-58. 1967.
"Of the world's numerous kinds of libraries, the national and the university may be properly characterized as having responsibilities for both general and universal or nearly universal collecting in the realm of scholarship. That is, these two, and only these two, commonly collect over a very broad spectrum, and in depth, material which makes possible the creation of new knowledge..."
Quality of selection is the truest test of the value of a collection.

33. Downs, R.B. DOCTORAL DEGREES AND LIBRARY RESOURCES. College and Research Libraries 30:417-421. September 1969.
This paper brings up to date a similar report published in 1966 showing the relationship between library holdings and the number of doctoral degrees granted in several American universities.

34. Downs, Robert B. DOCTORAL PROGRAMS AND LIBRARY RESOURCES. College and Research Libraries 27(2):123-129, 141. March, 1966.
"The chief purpose of the present investigation is to determine whether there exists any direct correlation between the number and variety of doctoral degrees awarded and the strength of library resources in individual institutions." Author says high-level doctoral work in a variety of fields requires 500,000 volumes. An institutions outstanding for its graduate offerings is almost invariably equally notable for the strength of its library resources."

35. Downs, Robert B. RESEARCH IN PROBLEMS OF RESOURCES. Library Trends 6(2):147-159. October 1957.
"Techniques for describing and evaluating library facilities on the research level are still experimental. No generally accepted standards have been accepted." Some advocate a specialist's point of view, some the librarian's broader view of

library's total resources. Should surveys be restricted to a narrow subject? Quantitative or qualitative?

36. Downs, Robert B. and Heussman, John W. STANDARDS FOR UNIVERSITY LIBRARIES. College and Research Libraries 31(1):28-35. January 1970.

The Committee on University Library Standards of the Association of College and Research Libraries and the Association of Research Libraries, in an attempt to formulate standards chose 50 U.S. and Canadian institutions as a control group for study. The tables presented here concerned with the book collection are: (1) Relationships of Total Library Expenditures to Salaries and Wages; Books, Periodicals and Binding; General Expenses, (2) Student Per Capita Expenditures for Books, Periodicals, and Binding, and for Total Library Expenditures, (3) Resources: Volumes Added, Current Periodicals, and Microforms, (4) Relationship of Enrollment to Number of Volumes and to Number of Current Journals.

37. Downs, Robert B. UNIFORM STATISTICS FOR LIBRARY HOLDINGS. Library Quarterly 16(1):63-69. January 1946.

Several possible methods for measuring holdings are described. Reporting bibliographical units rather than accessioned volumes is recommended. Linear measurement has its adherents but a report of bulk only gives no idea of numbers of volumes.

38. Eells, Walter C. MEASUREMENT OF THE ADEQUACY OF A SECONDARY SCHOOL LIBRARY: A REPORT ON ONE PHASE OF THE CO-OPERATIVE STUDY OF SECONDARY SCHOOL STANDARDS. A.L.A. Bulletin 32:160. March 1938.

"Other factors being equal, a library which has the largest percentage of recently published titles in certain fields is probably superior to one with only a small percentage of recent titles..."

39. Eells, Walter C. RECENCY AS A MEASURE OF BOOK COLLECTION. Junior College Journal 8(6):308-310. March 1938.

An analysis of recency in Mohrhardt's List of Books for Junior College Libraries (1937).

40. Emerson, W.L. ADEQUACY OF ENGINEERING RESOURCES FOR DOCTORAL RESEARCH IN A UNIVERSITY LIBRARY. College and Research Libraries 18(6):455-460, 504. 1957.

A study of the literature cited in dissertations of doctoral candidates in engineering at Columbia University to determine whether the university libraries could supply these sources.

41. Falk, Leslie K. and Lazerow, Samuel. COMPREHENSIVE COLLECTING - THEN AND NOW. Medical Library Association. Bulletin 49(3): 432-442. July 1961.

What is meant by "comprehensive" collection? It should acquire a copy of every procurable "publication" in (a) core subject areas, (b) immediately supporting disciplines, (c) nonstandard as well as standard explanations, (d) publications written for laymen as well as practioners, (e) value criteria should not intrude.

Why collect comprehensively? (a) "If one library collects and preserves fully in a well-defined field, other libraries, regardless of size, can accordingly adjust their collecting and withdrawal activities. (b) The indexing and cataloging of medical literature is most effectively accomplished by one institution having the literature closely under its control". (c) Comprehensive collecting is a requirement for the preservation of the history of civilization.

42. Frodin, Reuben. FINANCE AND THE COLLEGE LIBRARY. Library Quarterly 24(4):374-381. October 1954.

The kind of educational institution determines the character of the library. The author lists about twenty kinds of material which should be in a college library and suggests per capita expenditures.

43. Fussler, Herman H. ACQUISITION POLICY; LARGER UNIVERSITY LIBRARY. College and Research Libraries 14(4):363-367. October 1953.

Enlarging upon his theory that a research collection often has books for which there are no current specific needs, the author says: "...most of the books in a large research library are subjected to an extremely low, almost negligible amount of use. The use of a large research library is clearly concentrated at any one point in time over a small percentage of its total holdings. It is, of course, the balance of the library's holdings which are so infrequently used that in part distinguishes a research library from a college or reference library...".

44. Fussler, Herman H. and Simon, J.L. PATTERNS IN THE USE OF BOOKS IN LARGE RESEARCH LIBRARIES. Chicago, University of Chicago Press, 1969. 210 p.

Suggest devising formulas in terms of a variety of predictor variables relative to use, e.g. Subject + Time elapsed since last use + Language.

45. Gelfand, Morris A. A HISTORICAL STUDY OF THE EVALUATION OF LIBRARIES IN HIGHER INSTITUTIONS BY THE MIDDLE STATES ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS. Ph.D. thesis, New York University, 1960.

"Chiefly accreditation policies but analysis practices and results of library evaluations undertaken by A.L.A. after 1946".

46. Gelfand Morris A. TECHNIQUES OF LIBRARY EVALUATION IN THE MIDDLE STATES ASSOCIATION. College and Research Libraries 19(4):315-320. July 1958.
Chiefly quotes from Middle States Association of Colleges and Secondary Schools, Commission on Institutions of Higher Education.

47. THE GET-'EM-ALL' THEORY OF BOOK BUYING. Library Journal 85(17): 3387-3393. October 1960.
Views of six librarians on "bloc-buying" and 'get-'em-all' theory. Consensus is professional responsibility of librarian is in book selection.

48. Gormley, Mark M. ACADEMIC LIBRARIES. In Tauber, Maurice M. and Stephens, Irlene R. eds. Library surveys. New York, Columbia University Press, 1967. pp. 169-179.
"It is true that a small liberal arts college could admirably serve its purpose if it has a large percentage of the items listed in the Shaw, Lamont, and Michigan lists, a generous input from such a current aid as Choice, and additional items to satisfy unique demands...". Development of a university library requires more comprehensive study of many subject fields.

49. Gosnell, Charles F. THE RATE OF OBSOLESCENCE IN COLLEGE LIBRARY BOOK COLLECTIONS AS DETERMINED BY AN ANALYSIS OF THREE SELECT LISTS OF BOOKS FOR COLLEGE LIBRARIES. Ph.D. thesis, New York University, 1943.
Information was derived from a literature review and an analysis of Mohrhardt's A List of Books for Junior College Libraries, 1937, and the 1931 and 1940 editions of Shaw's A List of Books for College Libraries.

50. Gosnell, Charles F. SYSTEMATIC WEEDING. College and Research Libraries 11(2):137-138. April 1950.
The author gives the following reasons for weeding: (1) the size of the library should depend on the objectives of the library and the demands on it; (2) there is a definite relationship between the age of the book and the likelihood that it will be used.

51. Gosnell, Charles F. VALUES AND DANGERS OF STANDARD BOOK AND PERODICAL LISTS FOR COLLEGE LIBRARIES. College and Research Libraries 2(3):216-220. June 1941.
Chiefly a study of the Shaw, Mohrhardt, and Shaw Supplement lists, and obsolescence and mortality of such lists.

52. Harley, J. QUALITY VERSUS QUANTITY. Library Review 109:284-286.

Spring 1934.

A somewhat amusing article on book selection - on understanding of what constitutes value and the ability to recognize it. The author thinks there are few libraries which would not be better for a little "spring cleaning".

53. Harlow, Neal. LEVELS OF NEED FOR LIBRARY SERVICE IN ACADEMIC INSTITUTIONS. College and Research Libraries 24(5):359-364. September 1963.

"It is the hypothesis of this paper that there are distinctive levels of academic and research need in respect to library service within institutions of college and university rank, and if this be true, individual library programs can be designed to satisfy them..."

The depth of these library collection varies with need.

54. Haro, R.P. SOME PROBLEMS IN THE CONVERSION OF A COLLEGE TO A UNIVERSITY LIBRARY. College and Research Libraries 30(3):260-264. May 1969.

Instead of conforming to purely statistical considerations concerning size of enrollment or research and teaching programs, the author makes a plea for quality of library materials and a need for selectivity.

No one list or combination of lists can be safely used as a purchasing guide without the talents of a subject specialist or subject bibliographer.

55. Hart, James D. SEARCH AND RESEARCH: THE LIBRARIAN AND THE SCHOLAR. College and Research Libraries 19(5):365-374. September 1958.

Referring to the learned academic scholar he says: "Such a scholar must have an enormous accumulation of books, journals, and all the ancillary materials of a great library. This is the stuff of his research. Here is contained the expression of man's intellectual history. The scholar needs not only what Matthew Arnold called "The best that has been known and said," but the commonplace as well, for the mediocre is often quite as valuable as the great in providing an understanding of the climate of opinion out of which grew - or against which rebelled - a Milton, a Moliere, or a Goethe. For this reason, 'a man will,' as Dr. Johnson said, 'turn over half a library to make one book...'".

56. Hawkins, Miriam. QUESTIONABLE MEDICAL LITERATURE AND THE LIBRARY: A SYMPOSIUM. THE NATIONAL LIBRARY OF MEDICINE. Medical Library Association. Bulletin 51(4):473-479. October 1963.

Since National Library of Medicine's policy is to collect comprehensively it does collect such material.

57. Hirsch, Felix E. HOW GOOD ARE OUR COLLEGE LIBRARIES? New Jersey Education Association Review 32(10):442-443. June 1959.
A general article. College library standards say the library should be "the most important intellectual resource of the academic community".

58. Hirsch, Felix E. NEW COLLEGE LIBRARY STANDARDS. Library Journal 84(12):1994-1996. June 15, 1959.
The new standards aim to overcome the traditional variations in type of college-public, private, denominational, etc., and in regional differences in excellence. "The standards are more concerned with excellence and instructional usefulness of the holdings than with numbers...".

59. Hirsch, Felix E. NEW STANDARDS TO STRENGTHEN COLLEGE LIBRARIES. A.L.A. Bulletin 53(8):679-682. September 1959.
Important features of the standards for book collections are:
1. "Any attempt at censorship from whatever sources or for whatever reasons must be resisted.
2. "First among the factors affecting the size of the collections and the rate of growth are the nature of the curriculum, number of courses, methods of instruction, and number and character of graduate programs. The size of the student body is the fourth important point to consider.
3. "...The Standards for College Libraries emphasize the role which outstanding recent subject bibliographies and authoritative general lists should play in ascertaining the high caliber of book holdings and periodical subscriptions".

60. Hirsch, Felix E. ed. RAISING THE STANDARDS: COLLEGE LIBRARIES. Drexel Library Quarterly 2(3):199-291. July 1966.
A collection of papers. Partial contents: Hirsch, F.E. What is past is prologue; Brown, H.M. The Standards and the college library in 1965; Bailey, C.M. The role of the Standards; Muder, A.E. Accrediting agencies and the Standards; McComb, K.W. The problems of extension centers; Tonis, W.W. and Jacobs, K.J. Strengthening the college library.

61. Hirsch, Felix E. WHAT IS PAST IS PROLOGUE. Drexel Library Quarterly 2(3):199-201. July 1966.
Chiefly an introduction to a discussion of the Standards for College Libraries and Standards for Junior College Libraries.

62. Hirsch, Rudolph. EVALUATION OF BOOK COLLECTIONS. In Simonton, Wayne S. Library evaluation. Syracuse, N.Y., Syracuse University, 1959. pp. 7-20.

Four methods of evaluating a library collection are described: (1) by librarians, scholars or laymen in terms of library's policies and purposes; (2) by checking against standard or specially compiled lists; (3) by data on use; and (4) by comparison of expenditures against other institutions.

63. Hodgson, James G. THE LITERATURE OF LIBRARY STANDARDS. Third Military Librarians' Workshop. Monterey, Calif., U.S. Navy Postgraduate School, 1959. (AD 479447)
Discusses the development of library standards. A basic criterion is whether the library is adequate for its purpose. The bookstock is adequate only when it fills user needs in the most economical manner, considering costs to user and to library. A formula is provided which indicates when too large a proportion of material is borrowed from other libraries which it would have been cheaper to own.

64. Holley, Edward G. and Hendricks Donald D. RESOURCES OF TEXAS LIBRARIES. Austin, Texas State Library, 1960. 352 p.
Includes lists of 100 basic books and 237 basic reference books used to check holdings in the various libraries.

65. Humphreys, K.W. NATIONAL LIBRARY FUNCTIONS. UNESCO Bulletin for Libraries 20(4):158-169. July-August 1966.
Includes some discussion of the depth of national library collections.

66. Hunt, Peyton. PRINCIPLES AND STANDARDS FOR SURVEYING A COLLEGE LIBRARY. College and Research Libraries 2(2):110-116. March 1941.
The purpose of a survey is to study the performance of the library as an integral part of the whole college. It is aided by standard bibliographical aids provided by experts and accrediting agencies.

67. International Federation of Library Associations. LIBRARIES OF THE WORLD: A LONG-TERM PROGRAMME FOR THE INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS. The Hague, Nijhoff, 1963. 62 p.
Because of the avalanche of literature it is impossible to pursue the ideal of completeness. Even national libraries, after meeting their national obligations have to satisfy themselves with a selection from scholarly works published abroad.

68. Jenkins, Frances B. THE ACQUISITION OF SCIENTIFIC AND TECHNOLOGICAL MATERIAL. Library Trends 3(4):424-432. April 1955.
"The development of a library acquisitions program which will ensure a collection of materials in the field of science and technology adequate to meet the demands placed upon a

library depends basically on the answer to such questions as: Who will use the collection? What materials are necessary to provide good service to these users? How can the materials be made available?. ... Complete sets of all the serials which are of potential value to the users constitute the ideal resources of the library; incomplete files of periodicals are almost valueless for the particular issue needed is not usually available".

69. Johnson, Robert K. RESOURCES OF SELECTED MILITARY LIBRARIES. Library Quarterly 32(1):40-50. January 1962.
Eighteen military libraries are surveyed. Author says these should not be compared with large civilian colleges and universities. "...The importance of a library collection depends on other factors as well as size. The distinction of important military libraries lies in their subject specialization more than in the number of items collected".

70. Jones, F. Taylor. THE REGIONAL ACCREDITING ASSOCIATION AND THE STANDARD FOR COLLEGE LIBRARIES. College and Research Libraries 22(4):271-274. July 1961.
A discussion of quantitative standards vs. qualitative and how A.L.A. Standards will be implemented by the regional association.
In the modern concept of accreditation there are three fundamental questions: (1) Are this institution's objectives clearly defined, appropriate, and controlling in its development? (2) Has it established the conditions under which it can achieve its objectives? (3) Is it in fact achieving them?

71. Kebabian, Paul B. THE DISTANCE TO A STAR: SUBJECT MEASUREMENT OF THE LIBRARY OF CONGRESS AND UNIVERSITY OF FLORIDA COLLECTIONS. College and Research Libraries 27(4):267-270. July 1969.
LC catalog is used as measurement for Florida collections.

72. Kraft, Margit. ARGUMENT FOR SELECTIVITY IN THE ACQUISITIONS OF MATERIALS FOR RESEARCH LIBRARIES. Library Quarterly 37(3):284-295. July 1967. Comment by H. Hemmeberg. Library Quarterly 38:286-290. July 1968.
This author is trying to make a case for selectivity in research libraries and that subject-specialist librarians must be trained. However, much of the paper is devoted to the three arguments generally defended by librarians:
1. The ideal of the research collection is completeness, past, present and future
2. The library collects not only for the present but for

the future.
3. A research library never becomes obsolete.

73. Krikelas, James. LIBRARY STATISTICS AND THE MEASUREMENT OF LIBRARY SERVICES. A.L.A. Bulletin 60(5):494-499. May 1966.
"...There is no known evidence to demonstrate that size is correlated to quality or service in any way..."

74. Kuhlman, A.F. REPORT OF THE LIBRARY COMMITTEE; DEVELOPMENT OF SOUND AND PRACTICAL CRITERIA FOR MEASURING THE ADEQUACY OF THE COLLEGE LIBRARY; A PRELIMINARY STATEMENT. Southern Association Quarterly 4(2):298-302. May 1940.
Criteria for measuring resources are:
1. A select list of reference books grouped by subjects
2. A select list of periodicals (Lyle's list)
3. As a measuring rod to book holdings Mohrhardt's List of Books for Junior College Libraries and Shaw's Supplement of Books for College Libraries
4. Money spent for books and periodicals during last 5 years
5. Titles held published during last 5 years
6. Relation to curriculum

75. Kuhlman, A.F. TWO ARL APPROACHES TO COUNTING HOLDINGS OF RESEARCH LIBRARIES. College and Research Libraries 21(3):207-211. May 1960.
Standards for statistics are necessary for an accurate reporting of library holdings. The merits of reporting titles rather than volumes, processed volumes, number of volumes organized and ready for use, or bibliographical items, are discussed.

76. Lane, D.O. SELECTION OF ACADEMIC LIBRARY MATERIALS. A LITERATURE SURVEY. College and Research Libraries 29(5):364-372. September 1968.
"The purpose of this paper is to survey the professional literature as it pertains to the selection of materials for academic libraries, and especially selection with respect to who chooses titles for a collection and the criteria, guidelines, and tools utilized." This pertains to selection policy rather than standards for a collection.

77. Lazerow, Samuel. THE NATIONAL MEDICAL LIBRARY: ACQUISITION PROGRAM. Medical Library Association. Bulletin 42(4):447-455. October 1954.

The subjects collected at Research or Exhaustive level are listed together with NML's definitions of these terms. In surveying the Library, the Survey Committee checked against the

Quarterly Cumulative Index Medicus.

78. Leigh, Robert D. THE PUBLIC LIBRARY INQUIRY'S SAMPLING OF LIBRARY HOLDINGS OF BOOKS AND PERIODICALS. Library Quarterly 21(3): 157-172. July 1951.

"...The sample lists of new and standard works, periodicals, government documents, music materials and films were all made up in such a way as to give some indication of the nature and extent of library holdings of these materials..."

79. LIBRARY ASSOCIATION RECOMMENDS STANDARDS FOR COLLEGE LIBRARIES. Library Journal 89(20):4492. November 15, 1964.

"Basic initial bookstock for a college without degree work, according to the L.A. should be not less than 10,000 titles, and not less than 15,000 titles for a college with degree and specialized advanced courses. The number of periodicals should range from 100 for a small college of further education to a minimum of 600 for a college with substantial advanced work".

80. Lombardi, John. STANDARDS AT THE GRASS ROOTS. A.L.A. Bulletin 60(4):377-379. April 1966.

The author is referring to standards developed by the college personnel, a regional accrediting agency, and the American Library Association. Since the paper is addressed to an audience interested in junior colleges, its chief concern is how application of standards affects their accreditation.

81. Ludington, Flora B. EVALUATING THE ADEQUACY OF THE BOOK COLLECTION. College and Research Libraries 1(4):305-313. September 1940.

This is a report of a survey of Mount Holyoke College Library made by the faculty and library staff, not outside experts. In addition to a "common sense" evaluation, the faculty answered questionnaires about adequacy. Selected bibliographies were used for checking together with general lists.

82. Lyle, Guy R. THE ADMINISTRATION OF THE COLLEGE LIBRARY. 3rd ed. N.Y., Wilson Co., 1961. 419 p.

"The adequacy of the college library's collection cannot be measured in quantitative terms...To judge a collection superior or inferior on the basis of the volume holdings is as absurd as rating a college on the basis of its enrollment".

83. Lyle, Guy R. COUNTING LIBRARY HOLDINGS. College and Research Libraries 11(1):69-71. January 1950.

Includes "outline of a method of counting by physical volume".

ARL Committee on the Count of Library Holdings, appointed in January 1948 recommended its preference for the physical count rather than physical volume. "Since the rates between the number of physical volumes and the number of titles in a library is to some extent indicative of the research character of a library, The Committee recommended that university and large research libraries should also keep a count of acquisition by title".

84. McComb, Ralph W. THE PROBLEMS OF EXTENSION CENTERS. Drexel Library Quarterly 2(3):220-223. July 1966.
Standards for Junior Colleges are applicable but development for the specific objective of the center is the aim.

85. McCrum, Blanche P. BOOK SELECTION IN RELATION TO THE OPTIMAL SIZE OF A COLLEGE LIBRARY. College and Research Libraries 11(2):138-142. April 1950.
The author concludes her paper with these words: "Let us use with care criteria derived from frequency of circulation, recency of publication, and a bright new look". The selection of the best books rather than "total coverage, inclusive listings and nondiscriminating completeness" are advocated.

86. McCrum, Blanche P. A COLLEGE LIBRARY MAKES ITS OWN SURVEY PLAN. A.L.A. Bulletin 31:947-952. 1937.
The plan included a questionnaire for faculty use for estimating adequacy of the collection, and checking against the Shaw List of Books for College Libraries, Lyle's and Litchfield's periodical lists, Mudge, Publishers Weekly, etc.

87. McEwen, Robert W. THE NORTH CENTRAL ASSOCIATION'S 1943 SURVEY OF COLLEGE AND UNIVERSITY LIBRARIES. College and Research Libraries 4(3):253-256. June 1943.
"...The North Central Association took an important step some few years ago in deciding to base its accreditation on the acknowledged aims and curricular objectives of each institution".
"...The assumption of the 1934 North Central checklist that there would be a high correlation between holdings in the reference collection and library book holdings in general was statistically established".
Mohrhardt and Shaw lists, Shaw supplement and Mudge-Winchell lists were used, and Lyle list of periodicals.

88. McGrath, W.E., Huntsinger, R.C., and Barber, C.R. AN ALLOCATION FORMULA DERIVED FROM A FACTOR ANALYSIS OF ACADEMIC DEPARTMENTS. College and Research Libraries 30(1):51-62. January 1969.

Tallied books published in U.S. - derived from several American Book Publishing Records.

89. Maizell, R.E. STANDARDS FOR MEASURING THE EFFECTIVENESS OF TECHNICAL LIBRARY PERFORMANCE. IRE Transactions on Engineering Management EM7(2):69-72. June 1960.

Quality of collection: compare with published lists of key literature or citations in library's most used journals. Note records on library's ability to fill users' requests.

90. Meder, Albert E. ACCREDITING AGENCIES AND THE STANDARDS. Drexel Library Quarterly 2(3):213-219. July 1966.

"In summary, the influence of professional librarianship upon college evaluation has been more effective and more pervasive through creation of the Standards than would have been possible through direct accreditation of college libraries by the profession. In a sense, professional librarianship has found its life by losing it and achieved true success by emphasizing the spirit of quality and service rather than the letter of quantitative measures".

91. Middle States Association of Colleges and Secondary Schools. Commission on Institutions of Higher Education. EVALUATING THE LIBRARY: SUGGESTIONS FOR THE USE OF FACULTIES AND EVALUATION TEAMS. The Association, 1957. 2 p.

Evaluation should be made in relation to the institution's own mission and requirements. These facts having been established it should be determined to what extent the necessary resources are available and accessible.

92. Middle States Association of Colleges and Secondary Schools. Commission on Institutions of Higher Learning. WHAT TO CONSIDER IN EVALUATING THE LIBRARY. Library Journal 83(11):1656-1658. June 1, 1958.

A library evaluation prerequisite is an exact description of the institutions's mission and the means by which the institution proposes to fulfill it. Use of the library by students is the ultimate test of its effectiveness. Questions for evaluating the library include:

Is the library collection (a) broad, varied, authoritative, up-to-date; (b) supplemented by source, monographic, and periodical material for advanced study/research; (c) sufficient for specialized and technical fields offered by the institution; (d) being expanded so as to fill in gaps; (e) weeded efficiently to keep it solid and current; (f) supplemented but not replaced by interlibrary loans; (g) such as to facilitate advanced study and research by the faculty; and (h) buying enough new books to keep abreast of advances in the fields of instruction and research of the institution.

93. Miles, Ida R. SCIENTIFIC COLLECTIONS IN THE UNIVERSITY OF TENNESSEE - OAK RIDGE AREA. College and Research Libraries 19(3):223-226. May 1958.
Evaluation based on C.H. Brown's Scientific Serials, 1956.

94. Moon, E.E. STANDARDS FOR EVERYTHING. Library Journal 90(2):209. January 15, 1965.
Mr. Moon finds the "Objectives and Standards for Special Libraries" a statement of generalities and a presentation of the qualities sought by the special library.

95. Morris, Junius Hugh. THE FEASIBILITY OF USING CRITERIA BOOK LISTS TO EVALUATE JUNIOR COLLEGE LIBRARY HOLDINGS. Dissertation Abstracts 29(2):621A. August 1968.
"Random samples of from 49 to 64 books were selected from each of the following lists: (1) Hilary J. Deason, The AAAS Science Book List for Young Adults; (2) Frank J. Bertalan, The Junior College Library Collection; (3) Melvin J. Voight and J.H. Treyz, Books for College Libraries; (4) Warren B. Kuhn, The Julian Street Library; (5) Richard J. Lieta and W.A. Pease, The Opening Day Collection, Choice, Special Supplement (1967)..."

96. Norris, Elizabeth D. ESTABLISHING STANDARDS. Special Libraries 51:229-231. May 1960.
The base for a set of standards for a special library is the organization's objectives. Quantitative standards involve the number of books, the extent of subject resources, and tools of bibliographic control.

97. OBJECTIVES AND STANDARDS FOR SPECIAL LIBRARIES. Special Libraries 55(10):672-680. December 1964.
The following objectives and standards pertain to the book collection: (1) The subject coverage of the special library's collection should be intensive and extensive enough to meet the current and anticipated requirements of its clientele; (2) The size depends on the amount of available material that is pertinent to the organization's needs; (3) Acquisition policies should be established within the framework of the library's stated objectives.

98. OPTIMAL SIZE OF LIBRARIES: A SYMPOSIUM...FOUR PAPERS...PRESENTED AT THE GENERAL SESSION OF THE ACRL, 1969 ANNUAL A.L.A. CONFERENCE, ATLANTIC CITY, OCT. 6, 1969. College and Research Libraries 31(2):137-149. April 1970.
For analysis of contents see Gosnell, C.F. = Systematic weeding; McGrum, R.P. = Book selection in relation to the optimum size of a college library; Webb, Sidney = The optimum size of the college library; Rogers, R.D. = Regional depository

libraries and the problem of optimum size of college and university libraries.

99. Orne, Jerrold. PLACE OF THE LIBRARY IN THE EVALUATION OF GRADUATE WORK. College and Research Libraries 30(1):25-31. January 1969.

Abstract: "Traditional, time-honored methods of evaluating the adequacy of academic libraries for graduate work are no longer adequate in themselves. Rising numbers of students, changing degree programs, and advancing costs are rendering traditional evaluation methods less and less adequate. Greater attention should be devoted to the assessment of research collections in the region, to pondering new kinds of library plant needs, to rethinking the use of library personnel, to seeking new systems for funding library operations, and to articulating librarians more completely into the university community".

100. Orne, Jerrold. RENAISSANCE OR OBLIVION, OR, WHERE AWAY OUR GREAT RESEARCH LIBRARIES? Rub-Off 19(2):1-4. March-April 1968.

A general article which discusses the difficulty of making comparison when statistical measures vary. Some libraries report microforms as books, or uncataloged material as part of the library. There is a compulsion to use standard lists and specific size indicators.

101. Pargellis, Stanley. BUILDING A RESEARCH LIBRARY. College and Research Libraries 5(2):110-114. March 1944.

The author presents a case for selectivity in its acquisition policy, believing that the great research library should deliberately set out to acquire the best books in any field.

102. Parker, W.W. COLLEGE LIBRARY STANDARDS AND THE FUTURE. College and Research Libraries 19(5):357-364. September 1958.

"The chief concern of the [college] librarian ought to be the book collection". But the author goes on to say that "A college library is selective and a good college library must choose at both ends, buying the essential new books and weeding the surplus and less useful material". He recommends advice of specialists and comparison with standard, authoritative lists.

103. Patterson, Marianne A. SOME PRACTICAL ASPECTS OF MEDICAL SOCIETY LIBRARY OPERATION: A SYMPOSIUM. PRESERVE OR DISCARD? A PROBLEM IN LIBRARIANSHIP. Medical Library Association. Bulletin 46(1):45-49. January 1958.

Many medical librarian ignore the fact that there are national libraries and comprehensive collections which preserve everything. It is a false standard which evaluates a library according to the number of volumes; the quality of the collec-

tion and service would be wiser criteria.

104. Pennsylvania. University. Library. CHANGING PATTERNS OF SCHOLARSHIP AND THE FUTURE OF RESEARCH LIBRARIES: A SYMPOSIUM; edited by R. Hirsch. Philadelphia, University of Pennsylvania Press, 1951. 133 p.
R.E. Ellsworth and V.M. Clapp discuss comprehensiveness versus selectivity in building collections. Both consider the massiveness of published materials and the need for national and regional bibliographic control and book handling.

105. Piternick, George. LIBRARY GROWTH AND ACADEMIC QUALITY. College and Research Libraries 24(3):223-229. May 1963.
The author maintains that "the absolute size of a university library's holdings and the obsolute size of its yearly gross increments, and not its current growth rate, are the best measures of its quality..."

106. Randall, G.E. SPECIAL LIBRARY STANDARDS, STATISTICS, AND PERFORMANCE EVALUATION. Special Libraries 56:379-384. July-August 1965.
Contains a one page section on "special library collections". Included is this quote from SLA Standards: "The collection is intensive and extensive enough to meet both current and anticipated literature needs. The size of the collection depends on what is available in the subject area".

107. Raney, M. Llewellyn. THE UNIVERSITY LIBRARIES. Chicago, University of Chicago Press, 1933. (University of Chicago Survey, VII)
More than 400 lists and bibliographies were used for checking subject collections. (not examined)

108. Reichard, E.W. and Oyeagh, T.J. HOLDINGS AND EXPENDITURES OF U.S. ACADEMIC LIBRARIES: AN EVALUATIVE TECHNIQUE. College and Research Libraries 27(6):478-487. November 1966.
Acquisitions expenditures are examined relative to the number of students and faculty by the use of random sampling.

109. REPORT ON CONFERENCE [TO EXPLORE SOME CURRENT AND ANTICIPATED PROBLEMS IN THE BUILDING OF BOOK COLLECTIONS IN LIBRARIES, HELD IN CHICAGO APRIL 20-21]. Library Journal 84(11):1763-1767. June 1, 1959.
A discussion of the value and use of basic lists.

110. Shaw, Ronald. THE SCHOLAR AND THE FUTURE OF THE RESEARCH LIBRARY. N.Y. Hafner Press, 1966. 236 p.
"Research libraries are primarily the record-up knowledge of the race, emphasizing of fact and surface, in all their forms and infinitely remote conditions, the one essential

from which our humanists and our scientists are going to develop later new facts and fresh surmises. Research materials are in a sense the building blocks of civilization, and the storage element in the function of the research library - just the sheer holding of book and periodical materials, not for any immediate use at all, but for some possible, and possibly very remote, future use - is an extremely important, but not always very well understood part of that function".

111. Rogers, Rutherford D. REGIONAL DEPOSITORY LIBRARIES AND THE PROBLEM OF OPTIMUM SIZE OF COLLEGE AND UNIVERSITY LIBRARIES. College and Research Libraries 11(2):147-149. April 1950.

Little-used materials of research significance can be stored at the regional depository library, still available for those engaged in research, but also a solution to the ever growth problem.

112. Russel, John H. LIBRARY SELF-SURVEY. College and Research Libraries 17:127-131. March 1956.

An evaluation of the library of an educational institution is part of a check on the effectiveness of the total institution. The library facilities must serve the mission of the institution.

113. Sumore, Theodore. CURRENT CONDITION OF AMERICAN ACADEMIC LIBRARIES. Higher Education 20:(8):7-10. December 1963.

In trying to determine whether a college library is good or bad the author says: "It can, however, judge for itself the adequacy of its own library by comparing its resources with certain quantitative standards recommended by the American Library Association... Both documents stress the point that 'the standards must always be interpreted in the light of the aims and needs of the institution of which the library is a part'".

114. Sawyer, Hollis A. BOOK SELECTION IN THE REFERENCE DEPARTMENT OF THE NEW YORK PUBLIC LIBRARY. College and Research Libraries 6(1):20-22. December 1944.

The author refers to the New York Public Library as "one of the five great research libraries of the world". He says further that "The final objective of such a library is a complete record of human thought, emotion and action. Its collections should be developed without discrimination as to language, date, place, and form of publication. In short, it should have everything..."

115. Schwarzenberg, John G. HOLDINGS OF ART BOOKS IN SOUTHEASTERN LIBRARIES: A SURVEY AND REPORT. Southeastern Librarian 12(2):100-107. Summer 1962.

A college professor tried to find out how Southeastern libraries approach national standards. By means of a questionnaire he tried to find out the size of the library, the amount spent on art books, number of art students and faculty, and degree of specialization in the collection. Libraries were asked to check a list of series, serials and individual titles.

116. Sewell, P.H. THE EVALUATION OF LIBRARY SERVICES IN DEPTH. UNESCO Bulletin for Libraries 22(6):274-280. November-December 1968.
There is a section on the evaluation of the bookstock. Of this the author says: "There are advantages in expressing standards of bookstock in terms of annual additions to stock rather than total stock as this helps to indicate the relevance of what is being provided and whether it is up to date".
Because of changing monetary values "standards are better expressed as the number of volumes added rather than in terms of expenditure".

117. Shera, Jesse H. STANDARD LISTS, AN UNSTANDARDIZED VIEW. Wilson Library Bulletin 41(6):615, 630. February 1967.
While admitting the merits of many "standard" lists, the author thinks librarians have the responsibility for selection and it is a part of his professionalism.

118. Shipman, Joseph C. "OPTIMUM SIZE" AND THE LARGE SCIENCE RESEARCH LIBRARY. College and Research Libraries 25(5):354-357, 392. September 1966.
Among "devices" used in determination of optimum size are:
1. Establishment of restrictive limits of subject selection.
2. The use of literature citation counts for determining most-used serial titles, as well as for most-used foreign language titles...
3. Dependence upon neighboring libraries for particular areas of subject strength, and for breadth of coverage.
4. Extensive use of interlibrary loans
5. Discriminating weeding
6. Selective microfilming, and purchase of microfilm

119. Shores, Louis.. EVALUATING LIBRARY SERVICE TO HIGHER EDUCATION. College and Research Libraries 2(3):211-215, 236. June 1941.
The quantitative standards were based on the number of students, budget, curriculum offered and degrees offered. The qualitative standards were based on sampling from reference and periodical lists.

120. Simpson, Mary Lofton. EXPERIMENT IN ACQUISITION WITH THE LAMONT LIBRARY LIST. College and Research Libraries 15(4):430-433. October 1954.
The mission of the library of the Air University is to

support the courses of instruction as well as a research program. In 1942 it undertook a review of its book collection on an undergraduate level using the Lamont list. It was not the intent to imitate the Lamont holdings "but to employ the list of basic titles from a selective viewpoint".

121. Snyder, Monroe B. AN EXAMINATION OF METHODS USED IN A STUDY OF DECISION-MAKING. A.L.A. Bulletin 61(11):1319-1323. December 1967.

This is a description of the methods used to collect empirical data on the selection of science library materials. The project had two major objectives; (1) to describe the selection process as it existed; and (2) to provide practical guidelines designed to assist decision makers in selection.

122. Special Libraries Association. APPRAISALS OF "OBJECTIVES AND STANDARDS FOR SPECIAL LIBRARIES". Special Libraries 56(2): 197-201. March 1965.

At the time the Standards were published a number of library consultants, a library school dean and professor, an administrator in industry, a library specialist in the U.S. Office of Education, and practicing special librarians were asked to submit their frank opinions.

123. Stieg, Lewis. A TECHNIQUE FOR EVALUATING THE COLLEGE LIBRARY BOOK COLLECTION. Library Quarterly 13(1):34-44. January 1943.

"The technique described in this study for evaluating the college library book collection is based upon the use made of it. Two of the more important assumptions involved are: (1) the adequacy of the book collection is directly related to its use by students and faculty; (2) the circulation records of books withdrawn for home use give a reasonably representative picture of the use made of the library..."

124. Subbarao, M. Suseela. PLACE OF LIBRARY RESOURCES IN DOCTORAL PROGRAMS. College and Research Libraries 29(5):424-430. September 1968.

Abstract:

"This paper supplements an earlier paper by Robert B. Downs on doctoral programs and library resources. While the factors involved in successfully implementing a doctoral program are many and complex, to carry out such a program in a variety of fields, it appears that there should be at least three thousand current periodicals (and five hundred thousand volumes, as Dr. Downs states). Even with the best library resources, one cannot generally hope to produce more than one doctorate out of every ten graduate students enrolled in any one year, as figures in this paper indicate".

125. Tanis, N.E. and Jacobs, K.J.. STRENGTHENING THE COLLEGE LIBRARY. Drexel Library Quarterly 2(3):276-291. July 1966.

"A sketch of the library evaluation and the series of questions that the Committee constructed at the Henry Ford Community College may be helpful to other junior colleges interested in implementing the new Standards".

126. Tauber, Maurice F., Cook, C. Donald, and Logsden, Richard H. THE COLUMBIA UNIVERSITY LIBRARIES. A REPORT ON PRESENT AND FUTURE NEEDS PREPARED FOR THE PRESIDENT'S COMMITTEE ON THE EDUCATIONAL FUTURE OF THE UNIVERSITY. N.Y., Columbia University Press, 1958. 320 p.

Evaluation of the library resources may be approached in the following ways: (1) checking resources against bibliographies in different subject fields; (2) seeking faculty opinion on collections; (3) examining users' difficulties in obtaining materials needed for course work and research; and (4) measuring the collection against the holdings of other research libraries in the country.

127. Tauber, Maurice F. COLUMBIA UNIVERSITY LIBRARIES SELF-STUDY. College and Research Libraries 19(4):277-282. July 1958.

Concerning the library resources the author says: "...How does one measure the resources of a library? In surveys of libraries which have been made in American university libraries, there has been a common pattern of evaluating holdings through such measurements as (1) checking the resources against bibliographies in separate subject fields, (2) seeking faculty opinions on the strengths and limitations of collections, (3) examining users' difficulties in obtaining materials needed for course work and research, and (4) measuring the collections against the holdings of other research libraries in the country..."

128. Tauber, Maurice F. and Stephens, Irlene R. eds. LIBRARY SURVEYS. New York, Columbia University Press, 1967. 286 p. (Columbia University Studies in Library Science No. 16)

A comprehensive treatment of surveys with extensive bibliographies. The papers by M.M. Gormley on Academic Libraries and the one by E.E. Williams on Surveying Library Collections, are of special significance.

129. Tauber, Maurice F. SURVEY METHODS IN APPROACHING LIBRARY PROBLEMS. Library Trends 13(1):15-30. July 1964.

Surveying, whether by a single specialist, a team of specialists, or self-survey, is given broad coverage. On evaluation of collections, mention is made of the use of checklists and sampling, special analysis by language and subject, and lack of uniformity in reporting statistics.

Bibliography at end.

130. Thompson, Lawrence S. CONSULT THE SCHOLARS. Library Journal 92 (9):1804. May 1, 1967.
The author thinks the competent scholar is the one qualified to select and build a research library.

131. Thompson, Lawrence S. THE DOGMA OF BOOK SELECTION IN UNIVERSITY LIBRARIES. College and Research Libraries 21(6):441-445. November 1960.
"It seems to be generally recognized that if a library is to be a research library in the best sense, it must be comprehensive in its fields of emphasis, including good, bad, and indifferent..."

132. Webb, Helmer. THE OPTIMUM SIZE OF THE COLLEGE LIBRARY. College and Research Libraries 11(2):143-147. April 1950.
The author advocates a cut in size of such libraries, with constant weeding and warehouse storage within 8 hours distance.

133. Weber, D.C. CRITERIA FOR EVALUATING A COLLEGE LIBRARY. Association of American Colleges. Bulletin 43:629-633. December 1957.
One of the three major aspects of evaluating college libraries relates to the collection. There should be a sufficient quantity of the books required and suggested by the faculty for the subjects taught.

134. Willging, Eugene P. CATHOLIC COLLEGE AND UNIVERSITY LIBRARY: A SECOND SURVEY. Catholic Educational Review 51(9):577-591. November 1953.
This second survey checked quality against "Books for Catholic Colleges", considered microcard and film, interlibrary loan, etc.

135. Williams, Edwin E. RESEARCH LIBRARY ACQUISITIONS FROM EIGHT COUNTRIES. Library Quarterly 15(4):313-323. October 1945.
The purpose of the study was to examine resources of the country as a whole, not to compare individual collections. The technique followed was to prepare a list of 111 subjects for checking against the best available bibliography.

136. Williams, Edwin E. SURVEYING LIBRARY COLLECTIONS. In Tauber, Maurice F. and Stephens, Irlene R. eds. Library Surveys, N.Y. Columbia University Press, 1967. pp. 23-45.
While quantitative statistics on collections are available they are often unreliable. The quality of a collection is best determined by comparison with lists and special bibliographies.

137. Wilson, Louis R. and Tauber, Maurice F. THE UNIVERSITY LIBRARY:

THE ORGANIZATION, ADMINISTRATION, AND FUNCTIONS OF ACADEMIC LIBRARIES. N.Y. Columbia University Press, 1956. 2d ed. 641 p.

Principal method of evaluating libraries in surveys has been by comparison of various kinds:

1. Present conditions of library with that of past years. Helpful in revealing long-term trends for collections, books use, etc.
2. The library in relation to comparable aspects of the university as a whole.
3. Comparison with libraries of similar institutions. Need for precise definitions and consistent methods of collecting data, to be certain data are comparable.
4. Use of external standards. Generally products and materials to which standards may be applied are intellectual and not mathematically or quantitatively definable. Main difficulty in developing standards is that libraries vary in their objectives.

138. Wilson, Louis R. THE UNIVERSITY LIBRARY SURVEY: ITS RESULTS. College and Research Libraries 8(3):368-375. July 1947.

This is a history of the many surveys and something on the procedure employed by each. There were two types of surveys, limited and general, depending on the purpose for which the survey was conducted. When collections were examined in detail it was for the purpose of compiling desiderata lists, or guides for rounding out the collection, or providing a checklist of existing resources.